

**WHAT IS CLAIMED IS:**

1. A method for predicting patient responsiveness to a 5-HT<sub>3</sub> receptor antagonist, said method comprising:
  - (a) determining genotype of the promoter region of said patient's 5-HTTP gene; and
  - (b) correlating said genotype with patient responsiveness.

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2. The method of claim 1, wherein said 5-HT<sub>3</sub> receptor antagonist is used in a treatment for diarrhea-predominant irritable bowel syndrome.

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3. The method of claim 1, wherein said 5-HT<sub>3</sub> receptor antagonist is selected from the group consisting of: alosetron, ondansetron, granisetron, tropisetron, and dolasetron.

4. The method of claim 1, wherein said 5-HT<sub>3</sub> receptor antagonist is alosetron.

5. The method of claim 1, wherein said genotyping step comprises:

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- (a) amplifying a nucleic acid comprising the promoter region of said patient's 5-HTTP gene to obtain an amplified product; and

- (b) determining the size of said amplified product to identify a long variant/long variant, short variant/long variant, or short variant/short variant genotype of the promoter region of said patient's 5-HTTP gene.

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6. The method of claim 5, wherein said correlating step comprises relating said long variant/long variant, short variant/long variant, or short variant/short variant genotype with patient responsiveness.

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7. The method of claim 6, wherein said long variant/long variant genotype is related to a greater patient responsiveness than said short variant/long variant genotype.

8. The method of claim 6, wherein said patient responsiveness is determined by measuring a patient parameter.

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9. The method of claim 6, wherein said patient responsiveness is determined by comparing a measured patient parameter with a pre-determined clinically significant threshold.

10. The method of claim 9, wherein said measured patient parameter is a net negative change in a geometric center of colonic transit after treatment with said 5-HT<sub>3</sub> receptor antagonist.

11. The method of claim 9, wherein said pre-determined clinically significant threshold is a net negative change in the geometric center of colonic transit of at least about 1.14 colonic regions.

12. A method for treating a patient with diarrhea-predominant irritable bowel syndrome comprising:

- (a) obtaining a biological sample from said patient;
- (b) genotyping the promoter region of said sample's 5-HTTP gene; and
- (c) administering to said patient an effective amount of a 5-HT<sub>3</sub> receptor antagonist if said patient has a long variant/long variant genotype in the promoter region of the 5-HTTP gene.

13. The method of claim 12, wherein said biological sample is selected from the group consisting of a blood and a tissue sample.

14. A method for identifying a patient population for inclusion in a 5-HT<sub>3</sub> receptor antagonist clinical trial comprising:

- (a) obtaining a biological sample from a potential participant in said clinical trial;
- (b) genotyping the promoter region of the 5-HTTP gene contained within said biological sample; and
- (c) identifying said potential participant as suitable for inclusion in said patient population based on the presence of a long variant/long variant genotype in the promoter region of said potential participant's 5-HTTP gene.